

**ABSTRACT**

A signal interface supports bi-directional communication in a signal communication system. The signal interface is preferably utilized within a cable television/communication system set top box. The signal interface includes a 5 diplexer positioned between an input/output of the set top box and a signal splitter. By positioning the diplexer before the signal splitter, there is no attenuation of a return data channel (RDC) signal. Thus, a lower gain RDC 10 amplifier may be used. Additionally, the signal splitter is operable over a smaller frequency range since the signal splitter need only operate over the frequency 10 bandwidth of the video signal and not the combined frequency bandwidth of the video signal and the RDC.